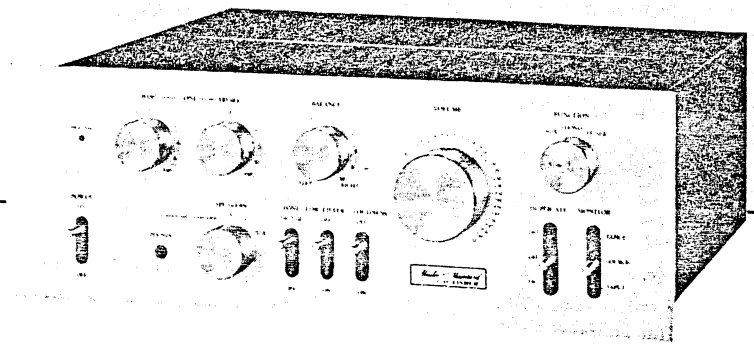
SERVICE MANUAL

FISHER

CA-2110E

Stereo Amplifier

(EUROPE)



The first name in high fidelity

Nominal Specifications For Information Only

AMPLIFIER		CA2110E
POWER AMPLIFIER SECTION Continuous RMS sine wave power per channel within stated bandwidth at no more than stated distortion and with an 8 ohm load		55watts
Power Band Width		20Hz-20kHz
Total Harmonic Distortion		0.2%
IM Distortion		0.1%
Speaker Damping		30
PREAMPLIFIER SECTION Frequency Response	Phono (30Hz-15kHz) Aux (20Hz-20kHz)	±1.0dB ±1.0dB
Input Sensitivity and Impedance	Phono	2mV/50k ohm
	Tape Monitor 1 Tape Monitor 2	150mV/100k ohm 150mV/100k ohm
	Tuner Auxiliary	150mV/100k ohm 150mV/100k ohm
Phono Max. Input Capability		150mV
Tone Control	Bass (100Hz) Treble (10kHz)	±10dB ±10dB
Filter	Low at 60Hz	-6dB
Loudness Contour (100Hz/10kHz)		+8dB/+4dB
Hum and Noise (IHF Short Circuit, A Net Work)	Phono Tape Monitor Tuner Auxiliary	75dB 95dB 95dB 95dB
Output Level and Impedance	Tape 1, 2	150mV/200ohm
GENERAL Power Requirements		110V/220V AC ±10% 240W/288VA
Dimensions (WxDxH)		16-9/16"x13-3/4"x5-15/16"
Weight		20.9 lbs.

Because Fisher products are subject to continuous improvement, Fisher reserves the right to modify, change, or alter any design or specifications without notice and without incurring any obligation. Fisher reserves the right to make changes and improvements upon its products without any obligation to install such changes upon any of its products previously manufactured.

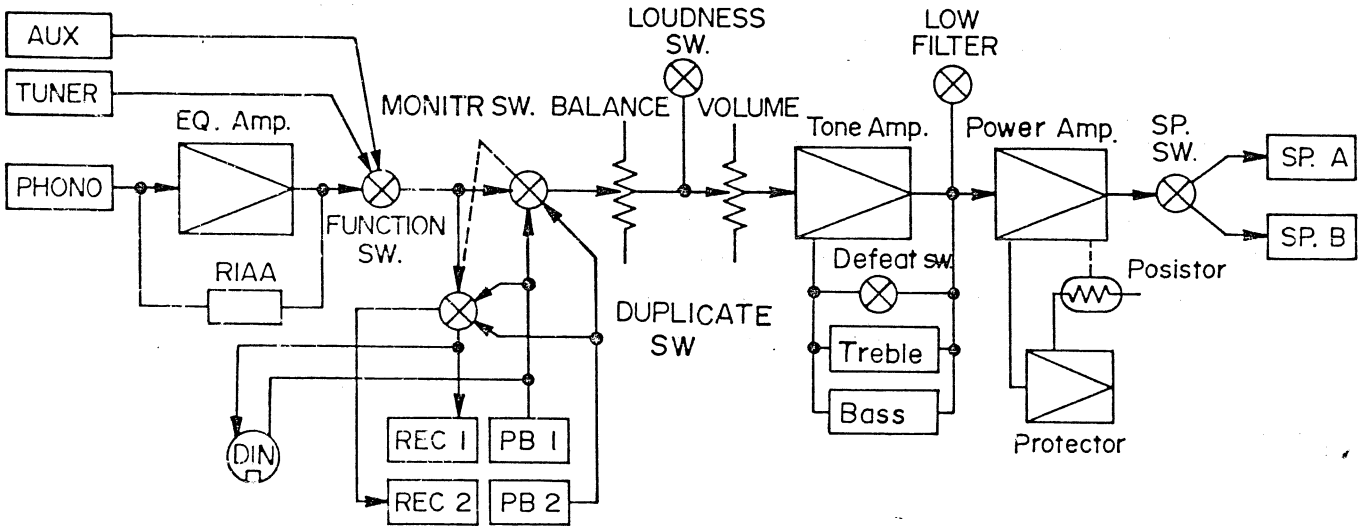
EXPLANATION OF PROTECTIVE CIRCUITS

* For about two seconds after the power switch is turned on, the speakers remain silent because the power muting circuit operates during this time.

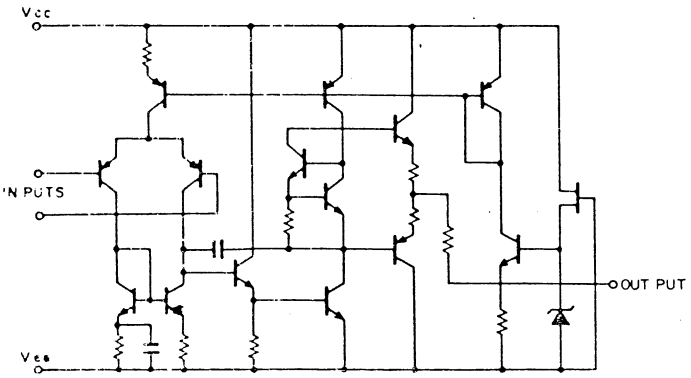
* If this unit is operated with speakers of 4Ω or less, or by being operated to drive two pairs of speakers of 8Ω or less simultaneously, its power limitter will start to operate. If under these conditions the volume is raised to a high level the sound from the speakers may be distorted

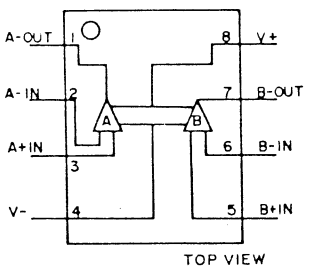
* If the speaker terminals are short-circuited or the ventilation holes at the cabinet top are blocked during long periods of operation, the internal temperature may rise abnormally. At about 80° C, the thermal sensor (temperature detection) circuit becomes activated and will interrupt the signal. If the cause is removed and the internal temperature is back to normal, the unit automatically resets itself to restore normal operation.

BLOCK DIAGRAM

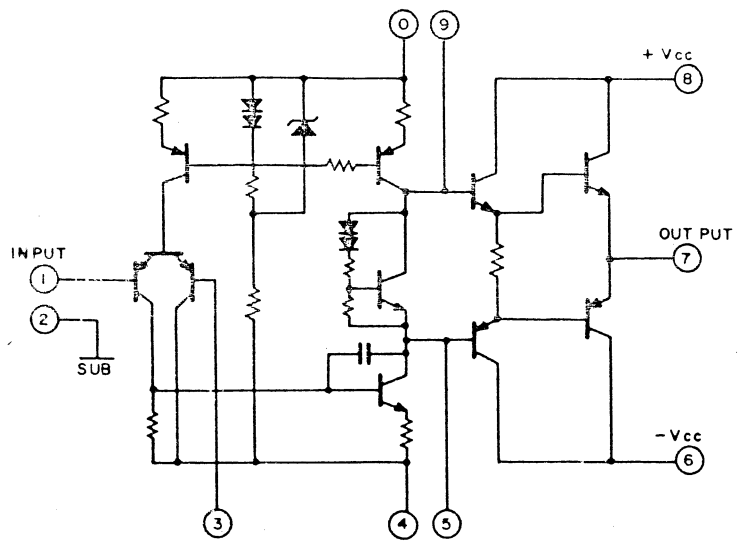


EQ/PRE AMP IC NJM4558D EQUIVALENT CIRCUIT





POWER AMP IC SSIOOI EQUIVALENT CIRCUIT



PARTS LIST

POWER AMP/POWER SUPPLY P.C. ASSY

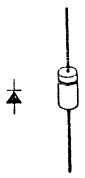
Ref. No.	Parts Number	Description
	1310 4001 78103	Power AMP/Power Supply P.C. Assy
	HLL-PTH487A-B	Posistor (85° C)
	1312 6201 21802	Plate Heat Sink
	CAPACITORS	
C01,02	C1HCSK331SL	Ceramic 330pF 50V ±10 %
C03,04	C1HRB-105A	Electrolytic 1 μF 50V
C05,06	C1ARB-336A	Electrolytic 33 μF 10V
C07,08 09,10	C1HRB-107A	Electrolytic 100 μF 50V
C11,12	C1HRB-106A	Electrolytic 10 μF 50V
C13,14	C1HCDJ120SL	Ceramic 12pF 50V
C15,16 17,18	C1HFAK223A	Mylar 0.022 μF 50V ±10 %
C19,20	C1HYSZ473A	Ceramic 0.047 μF 50V +80,–20 %
C21,22 23,24	C2HYSP103A	Ceramic 0.01 μF 500V +100,–0 %
C25	C0JRB-227A	Electrolytic 220 μF 6.3V
C26	C1HRB-105A	Electrolytic 1 μF 50V
	SEMICONDUCTORS	
D01,02 03,04 05,06 07,08 09,10 11,12 13,14 15,16	2055 9040 44210	Diode DS-442
D18	DNN-RD-6.2E	Diode RD-6.2E
D19	DDD-S5VB20-1	Diode S5VB20
IC01,02	2065 6881 00110	IC SS1001
Q01,02	2035 5100 53660	TR 2SC536F
Q03,04 05	2035 6701 17560	TR 2SC1175F
Q06,07	2035 6800 65960	TR 2SA659F

Ref. No.	Parts Number	Description
	RESISTORS	
R01,02	R2EDSJ272A	Carbon 2.7k 1/4W ±5 %
R03,04	R2EDZJ224PAP	Carbon 220k 1/4W ±5 %
R05,06	R2EDSJ563A	Carbon 56k 1/4W ±5 %
R07,08	R2EDSJ272A	Carbon 2.7k 1/4W ±5 %
R09,10 11,12	R2HZPK330A	Fuse 33 1/2W ±10 %
R13,14	R3HEPKR47A	Cement 0.47 5W ±10 %
R15,16 17,18	R2EDSJ101A	Carbon 100 1/4W ±5 %
R19,20 21,22 23,24	R2EDSJ102A	Carbon 1k 1/4W ±5 %
R25,26	R2EDSJ563A	Carbon 56k 1/4W ±5 %
R27,28	R3DXAK100A	Oxide Metal Film 10 2W ±10 %
R29,30	R3DXAK471A	Oxide Metal Film 470 2W±10 %
R31,32	R3DXAK102A	Oxide Metal Film 1k 2W±10 %
R33	R2EDSJ223A	Carbon 22k 1/4W ±5 %
R34	R2EDSJ222A	Carbon 2.2k 1/4W ±5 %
R35	R2EDSJ221A	Carbon 220 1/4W ±5 %
R36	R2EDSJ123A	Carbon 12k 1/4W ±5 %
R37	R2HDPJ821A	Carbon 820 1/2W ±5 %
R38	R2HDPJ122A	Carbon 1.2k 1/2W ±5 %

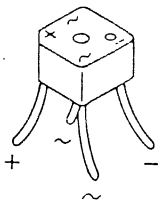
TRANSISTOR FRONT VIEW

Q01, 02 2SC536
Q03~05 2SC1175
Q06, 07 2SA659

DIODE FRONT VIEW



D01~16 DS-442
D18 RD6.2E

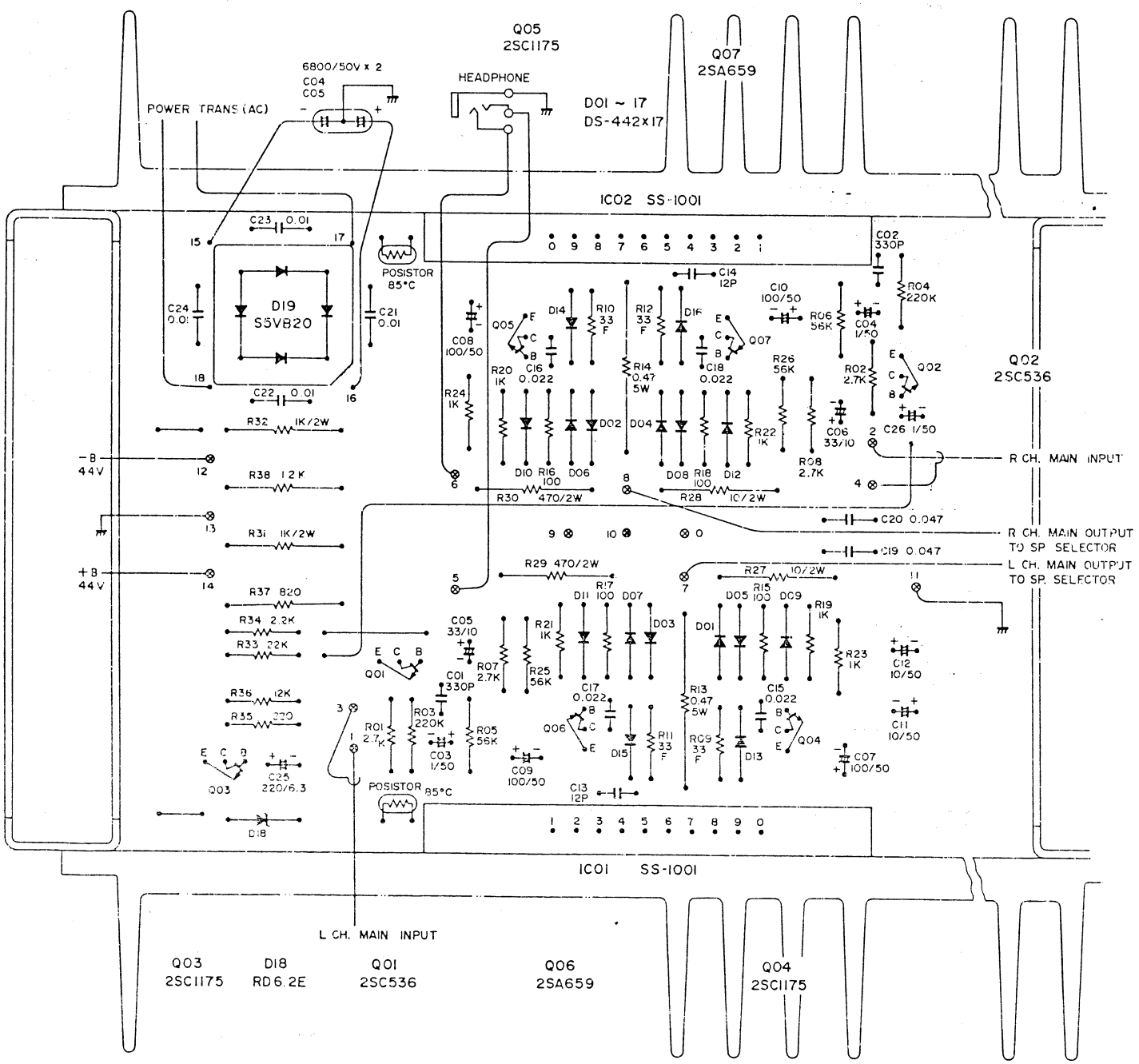


D19 S5VB20

TRANSISTOR DC VOLTAGES				
SYMBOL NO.	DEVICE	B	C	E
Q01,02	2SC536	–6.2V		0V
Q03	2SC1175	–6.4V	–6.2V	–5.8V
Q04,05	2SC1175		+1.0V	
Q06,07	2SA659		–1.0V	

POWER AMP IC PIN NUMBERS VOLTAGES										
DEVICE / IC PIN NO	1	2	3	4	5	6	7	8	9	10
IC01 SS-1001		0V	0V	–44V	–1.3V	–44V		+44V	+1.3V	+44V

POWER AMP/POWER SUPPLY P.C.BOARD



BOTTOM VIEW

PARTS LIST

PRE TONE PC ASSY

Ref. No.	Parts Number	Description		
	1310 4001 78204	PRE Tone P.C. Assy		
VR02	4 2229 25381	VR 250kx2 (Balance)		
VR03,04	4 2229 25770	VR 50kx2 (Tone)		
VR01	4 2229 26030	VR 250kx2 (Volume)		
S3	4 2319 24393	SW Lever 6P (Loudness)		
S5-1,5-2	4 2319 24401	SW Lever 12P (Tone Defeat)		
	CAPACITORS			
C01,02	C1ETRM475A	Tantalum 4.7 μF	25V	20 %
C03,04	C1ARB-336A	Electrolytic 33 μF	10V	
C05,06	C1HFAJ472A	Mylar 0.0047 μF	50V	±5 %
C07,08	C1HFAJ183A	Mylar 0.018 μF	50V	±5 %
C09,10	C1EUEM225A	Alsicon 2.2 μF	25V	±20 %
C11,12	C1HCSK101SL	Ceramic 100pF	50V	±10 %
C13,14	C1HFAK273A	Mylar 0.027 μF	50V	±10 %
C15,16 17,18	C1HRB-105A	Electrolytic 1 μF	50V	
C19,20	C1HFAK223A	Mylar 0.022 μF	50V	±10 %
C21,22	C1HFAK124A	Mylar 0.12 μF	50V	±10 %
C23,24	C1HFAK332A	Mylar 0.0033 μF	50V	±10 %
C25,26	C1HFAK393A	Mylar 0.039 μF	50V	±10 %
C27,28	C1HFAK683A	Mylar 0.068 μF	50V	±10 %
C29,30	C1HRB-105A	Electrolytic 1 μF	50V	
C31,32	C1HRB-337A	Electrolytic 330 μF		±50V
C33,34	C1HCDK271SL	Ceramic 270pF	50V	±10 %

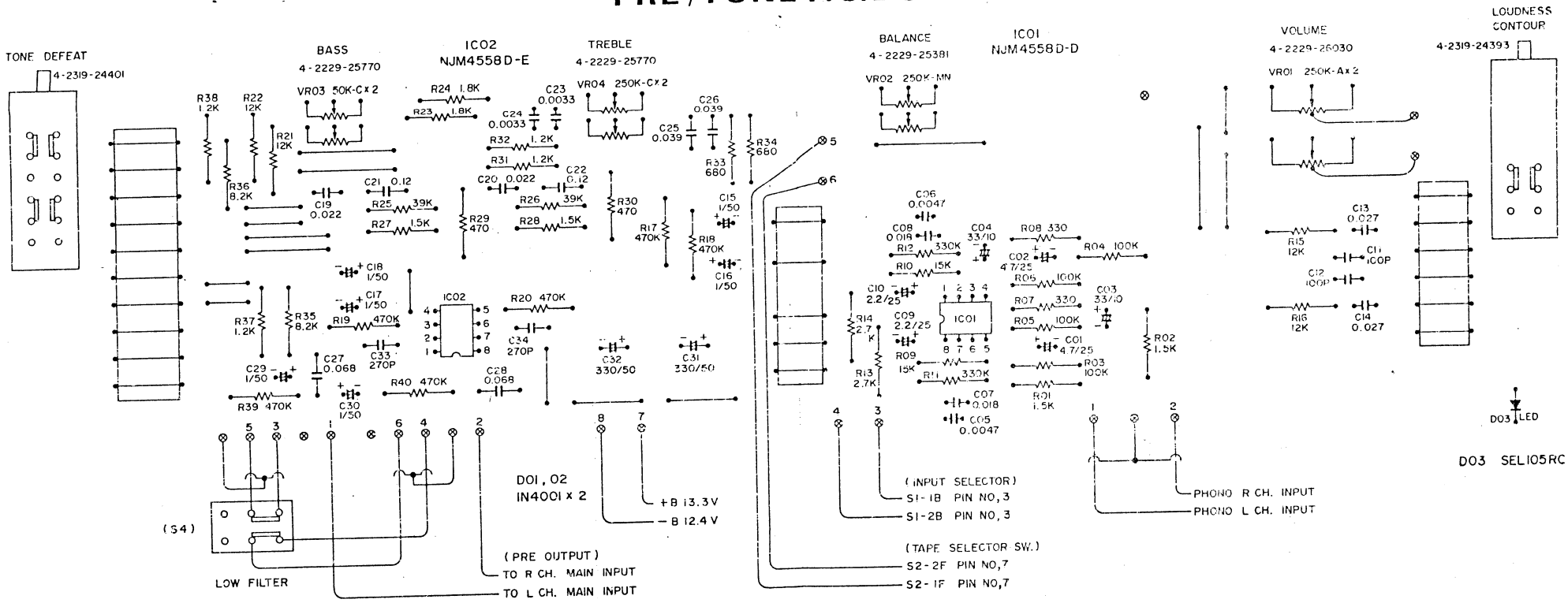
Ref. No.	Parts Number	Description		
	SEMICONDUCTORS			
D03	4 6129 20631	Pilot Lamp (SEL 105RC)		
IC01	IJJ-NJM4558D	NJM4558D-D		
IC02	IJJ-NJM4558D	NJM4558D-E		
	RESISTORS			
R01,02	R2EDSJ152A	Carbon	1.5k	1/4W ±5 %
R03,04 05,06	R2EDSJ104A	Carbon	100k	1/4W ±5 %
R07,08	R2EDSJ331A	Carbon	330	1/4W ±5 %
R09,10	R2EDSJ153A	Carbon	15k	1/4W ±5 %
R11,12	R2EDZJ334APA	Carbon	330k	1/4W ±5 %
R13,14	R2EDSJ272A	Carbon	2.7k	1/4W ±5 %
R15,16	R2EDSJ123A	Carbon	12k	1/4W ±5 %
R17,18 19,20	R2EDSJ474A	Carbon	470k	1/4W ±5 %
R21,22	R2EDSJ123A	Carbon	12k	1/4W ±5 %
R23,24	R2EDSJ182A	Carbon	1.8k	1/4W ±5 %
R25,26	R2EDSJ393A	Carbon	39k	1/4W ±5 %
R27,28	R2EDSJ152A	Carbon	1.5k	1/4W ±5 %
R29,30	R2EDSJ471A	Carbon	470	1/4W ±5 %
R31,32	R2EDSJ122A	Carbon	1.2k	1/4W ±5 %
R33,34	R2EDSJ681A	Carbon	680	1/4W ±5 %
R35,36	R2EDSJ822A	Carbon	8.2k	1/4W ±5 %
R37,38	R2EDSJ122A	Carbon	1.2k	1/4W ±5 %
R39,40	R2EDSJ474A	Carbon	470k	1/4W ±5 %

TAPE SWITCH PCB Assy

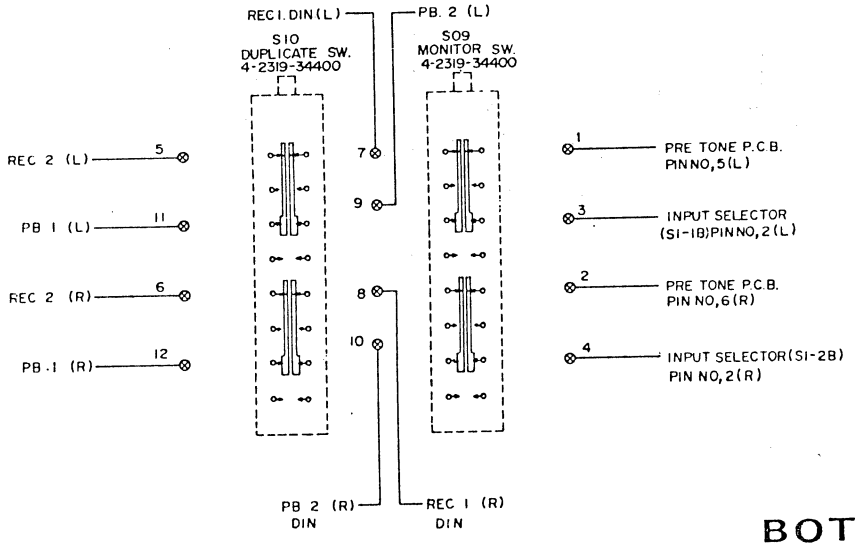
1310 4001 77500

Ref. No.	Parts Number	Description
S03,04	4 2319 34400	SW Lever 16P (Monitor & Duplicate)

PRE /TONE P.C.BOARD



TAPE SWITCH P.C.BOARD



IC TOP VIEW

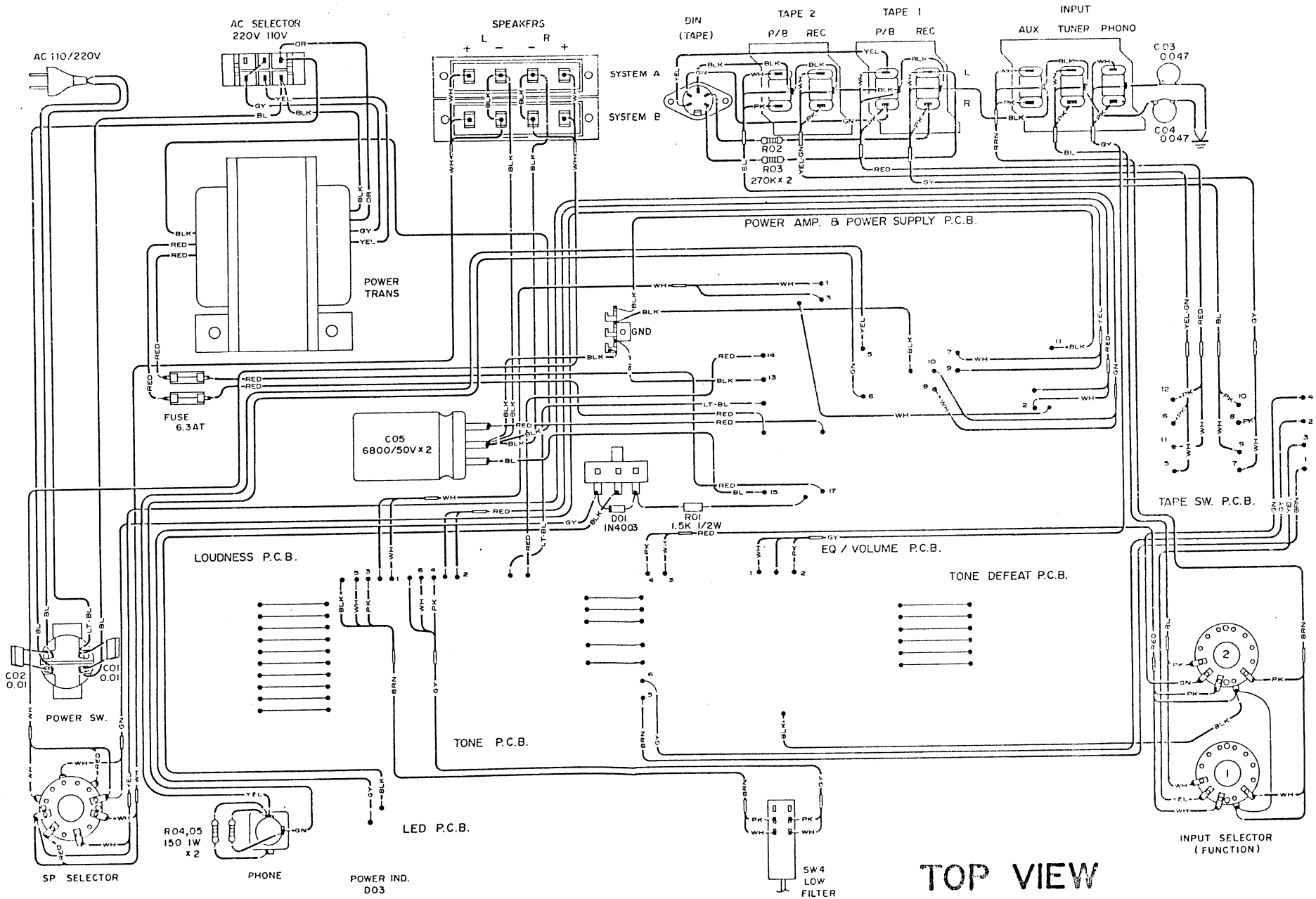
IC01 JM4558D-D
IC02 JM4558D-E

PRE/TONE AMP IC PIN NUMBERS VOLTAGES

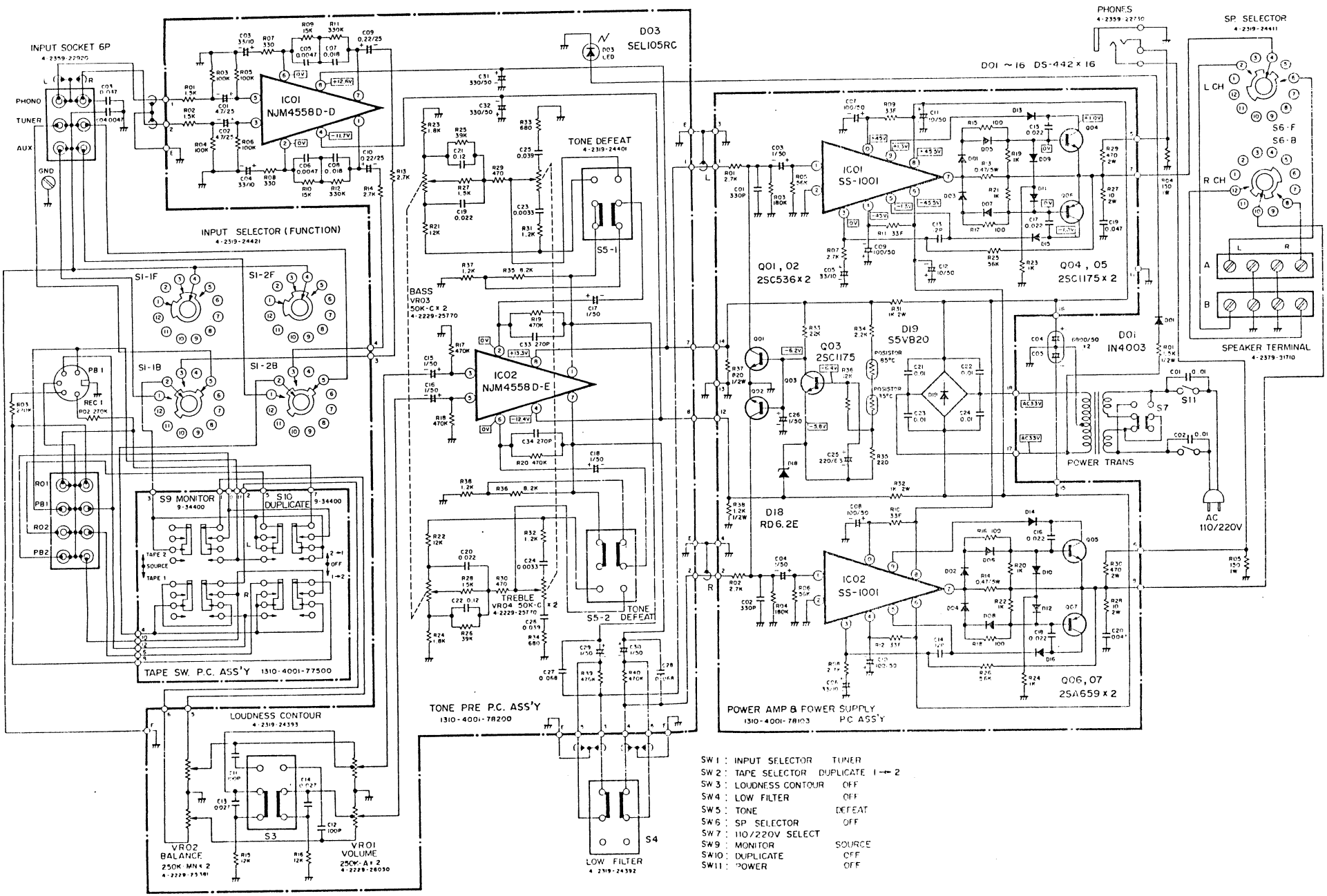
DEVICE \ IC PIN NO	1	2	3	4	5	6	7	8
IC01 JM4558D-D		0V		-12.4V		0V		13.3V
IC02 JM4558D-E		0V		-12.4V		0V		13.3V

BOTTOM VIEW

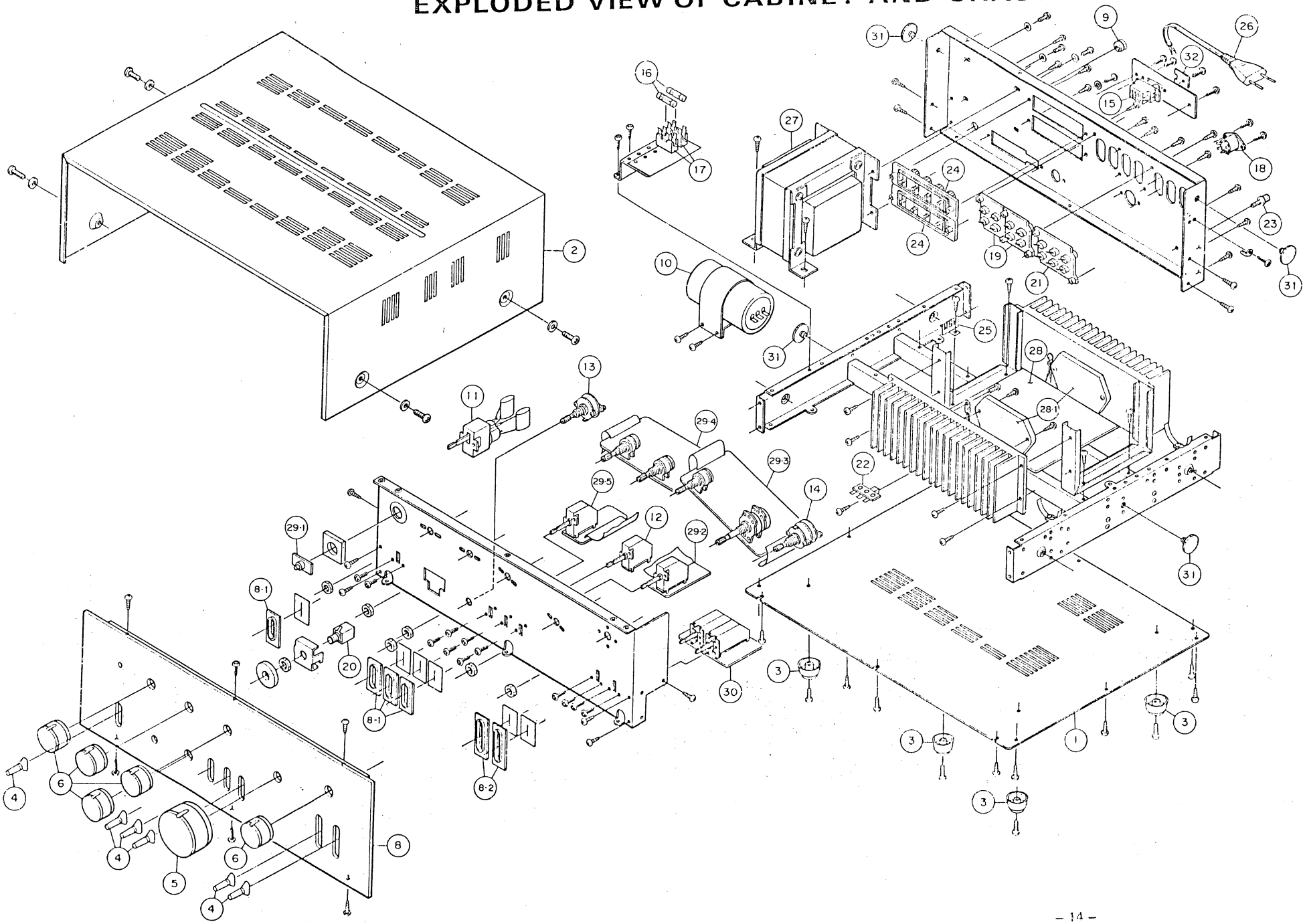
POINT TO POINT WIRING DIAGRAM



SCHEMATIC DIAGRAM



EXPLODED VIEW OF CABINET AND CHASSIS



PARTS LIST

Ref. No.		Parts Number	Description
CABINET PARTS LIST			
1		1312 1105 16300	Plate Bottom
2		1312 1410 14501	Cover
3		1312 1801 13200	Leg
APPEARANCE PARTS LIST			
4		1310 1001 37601	Knob Assy (Lever Switches)
5		1310 1001 37900	Knob Assy (Volume)
6		1310 1001 38100	Knob Assy (Function/Balance/Speakers/Bass/Treble)
8		1310 1016 26200	Dress Panel Assy
8-1	*	1312 1116 16000	Frame
8-2	*	1312 1116 16100	Frame
ELECTRICAL PARTS LIST			
9		1312 6111 14200	Bushing (Line Cord Cramp)
10 (C04,05)		4 2239 20940	Capacitor Electrolytic 6800 μFx2 50V
11		4 2319 24382	SW Lever 4P (Power)
12		4 2319 24392	SW Lever 6P (Low Filter)
13		4 2319 24411	SW Rotary (Speakers)
14		4 2319 24421	SW Rotary (Function)
15		4 2319 21531	Switch Slide 6P
16		4 2349 21570	Fuse 6.3A (Secondary)
17		4 2359 21021	Fuse Holder
18		4 2359 20190	Socket (DIN 5P)
19		4 2359 22710	Socket 4P (Accessory Jack)
20		4 2359 22730	Socket 1P (Jack Head Phone)
21		4 2359 22920	Socket 6P (Accessory Jack)
22		4 2379 20140	Terminal Lug 2P
23		4 2379 21650	Terminal 1P
24		4 2379 21710	Terminal 4P (Speakers Connector)
25		4 2379 21840	Terminal
26		4 2439 20521	Line Cord
27		4 2519 00620	Power Transformer
28	*	1310 4001 78103	Power AMP, Power Supply P.C. Assy
28-1		2065 6881 00110	IC SS1001
29	*	1310 4001 78204	PRE, Tone P.C. Assy
29-1	*		LED P.C.B.
29-2	*		Loudness Contour P.C.B.
29-3	*		EQ, Volume P.C.B.
29-4	*		Tone P.C.B.
29-5	*		Tone Defeat P.C.B.
30	*	1310 4001 75500	Tape Switch P.C. Assy
31	*	1312 4208 25700	Spacer
32	*	1312 7104 00500	Plate Pad Switch
C01,02		C2EHRM103A	Capacitor Metalized Paper 0.01 μF 250V +100, –0 %
C03,04		C1HYDZ473A	Capacitor Ceramic 0.047 μ F 50V +80, -20 %
D01		DGG-1N4003	Diode 1N4003
R01		R2HCPK152A	Resistor Solid 1.5k 1/2W ±10 %
R02,03		REDPJ274A	Resistor Carbon 270k 1/4W ±5 %
R04,05		R3AXPK151A	Oxide Metal Film 150 1W ±10 %

NOTE: * Asterisk indicates not a service part.